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TRANSPARENT PAINTING ON GLASS.

By Edward Groom.

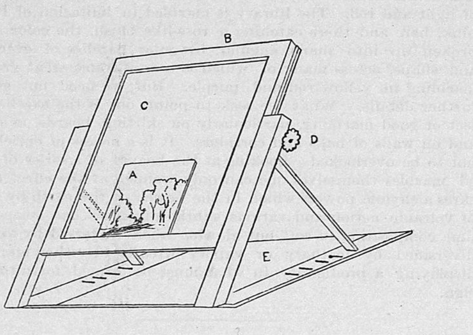
THE working requisites and materials are glasses, frames, a fine pointed pencil and holder, a palette knife, brushes, dabbers, a rest-stick, a round pointed knife, an etching needle, a few pieces of cloth, and water-colors. Some observations on the qualities of the materials may assist the student in the selection of those best suited for his purpose, and thus time and expense may be saved. **Glass** has a rough and a smooth side. The means of distinguishing these is to draw the finger-nail over the surface, when the rough side may be readily determined by the gritty particles which occur sensibly to the nail. As these particles would prevent the color from lying evenly, the smooth side is that on which the drawing must be made and the painting executed. For common subjects that material called flatted crown glass will be found suitable, but if nicety of execution is necessary plate-glass must be used. In all cases, the glass must be as free from specks as possible, and of the same size as the subject-glass of the magic lantern, through which the pictures are to be exhibited.

Frames are generally made of mahogany, but deal will answer equally well. Any carpenter can make the square and oblong frames; but when they are required to be circular, it will be necessary to have the circles cut by a turner.

The Fine-pointed Pen is for drawing outlines, and will be found more available and expeditious than a brush. **The Palette** may be either of porcelain free from specks or grit, or of enamelled wood. The latter is lighter, but it will not wear so well as the former. The tints are mixed and arranged upon the palette, and care must be taken to keep it clean and free from scratches. **The Palette Knife** is used to mix tints, and both to place the colors upon the palatte and to remove them from it. It should be thin, flexible, and tapering toward the point.

The Brushes should be of sable, of a pale yellowish color; soft to the touch, yet firm and elastic, so at once to resume their form after being pressed laterally against the hand. In form, they should be flat and wedge like, and without any straggling or diverging hairs. None but those of the best manufacture should be used.

Dabbers (so called from their use) must be made by the student; and as all finish depends upon them, great nicety must be observed in preparing them. They are formed of round brushes of very fine camel's hairs. The points must be cut off, and the blunted ends must be held to the flame of a candle, so as to form and round them. This is an operation of some delicacy; but a little practice will some enable the student to perform it successfully. They must be turned and moved to and fro, so as to singe them into the desired form; after which, the burnt ends must be cleared and finished off, by rubbing upon the find sand-paper known as number O.



The Easel best adapted for painting on glass will be obtained by taking a rack easel drawing-board, and inserting a framed piece of glass instead of the shifting board. The accompanying diagram will best explain its use and management, Fig. 3. A is the piece of glass to be painted on; B the lifting frame of the easel, into which is inserted the plate of glass C, occupying the place of the shifting board which the frame commonly contains. The frame slides in grooves, and is fixed at any height convenient to the painter, by means of the screw D. The horizontal rack-board E, is covered with white paper, or card-board, in order that the effect of the colors applied may be clearly seen. **The Rest Stick** is used as in oil painting, to rest and steady the hand when great neatness and precision of touch are necessary.

A Round Pointed Knife is useful for removing color, when the effect of white is to be given, and also for improving lines by paring their edges. For this purpose, an ordinary single bladed pocket-knife will be found the best. It should be kept in good condition; that is, sharp and smooth at the rounded point. **An Etching Needle** is required for producing minute touches of light, such as those on the blades of grass. **Pieces of Cloth** are used for cleaning the brushes and dabbers, to which the utmost attention must be paid, if the student would secure purity and brilliancy of color. These pieces of cloth should have very little nap on them.

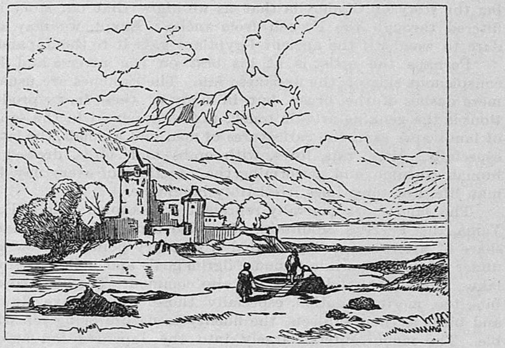
The Colors are those prepared for water-color painting, and procurable in tubes. The following are the most valuable for painting glass:

Yellow—aureolin, gamboge, Italian pink, gallstone, Indian yellow. *Red*—madder lake, crimson lake. *Blue*—Prussian blue, indigo. *Orange*—burnt sienna. *Brown*—madder brown, Vandyke brown. *Black*—lamp black.

The number of colors available for painting on glass is necessarily limited. Only those which are transparent—that is, through which light is transmitted—can be used.

THE OUTLINE.

The chief desideratum in an outline is, that is shall remain undistured through the subsequent paintings. If the subject be an engraving, and the glass to which it is to be transferred will sufficiently cover it, the shortest process is to trace it. To accomplish this, place the engraving upon a flat surface, with its rough side downward, upon the part to be traced. When the position of the glass is determined, in order to secure it from moving, small weights should be placed resting on the edges. Before being worked upon, the glass must be well rubbed with a silk handkerchief; and the glass must be sufficiently large to leave a margin of about one-eighth of an inch, to allow the pasting of a narrow paper rim, to support the glass which is placed over the picture when finished.

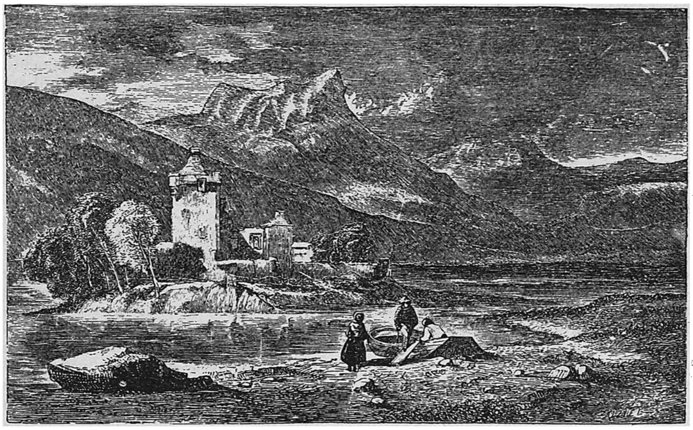


In a small saucer prepare a tint of rose madder and Prussian blue, using a little ox gall in the water. With this tint charge a middling sized brush, and from this reservoir supply the pen. Commence with the distance, and trace all the outlines, using the pen with a light, but firm touch, and without hesitation, as any error can be easily remedied afterwards. Prepare, in another saucer, a tint of madder brown, with a very little Prussian blue, with which trace the middle distance, or those parts of the composition which lie between the foreground and the remoter distance. It will be seen in the engraving that the lines are firmer, and the objects have more solidity in proportion as they are nearer the foreground. This feeling must be observed in the tracing.

The tint for the foreground will consist of madder brown and burnt sienna, with which, and with a touch yet firmer than in tracing the distance, the foreground must be drawn. It would be well to outline the objects in the foreground with their local colors; but this had better not be attempted until the student has made some progress, and attained to some executive power. When the tracing or drawing is completed, the glass must be removed to the easel, which will be so placed with regard to the window, that a full light may fall upon the white card-board. If the painting is executed by lamp-light, a green paper shade will be found useful for throwing the light upon the proper place, and for protecting the eyes from the glare.

The drawing may be examined by reversing it; errors if there be any, will thus become at once apparent. Corrections must be carefully effected by the aid of the knife, with which the lines are improved, or pared down, wherever they are ragged or thicker than they should be. When the drawing has been thus examined, and the necessary corrections effected, the operation of outlining is concluded. We propose to explain the process of painting the subject, as a dissolving view; and the instructions from which the picture may be worked will be equally available for any other subject. By making a distinction between the tints and the lines drawn for the respective distances, the student will make a great step toward securing aërial effect—one of the greatest charms a picture can possess. The gradations in the appropriately tinted outline materially assist in the realization of this effect. If the subject be too large or too small for the operation of tracing, the outline must be copied on paper of the size required. This may be effected with accuracy, by dividing subject and copy into an equal number of squares, whereby the place of every object in the composition is readily given. The drawing may then be traced on the glass as an engraving.

The outline is preserved by being covered with another thin piece of glass, of which the rougher side is turned inwards. The edges of the two pieces are then firmly attached by a slip of strong gummed paper. The picture may be painted upon either of these two pieces of glass; but it will be found more convenient to work upon the blank glass, for the sake of preserving the outline, and the facility of correction. This, indeed, becomes a necessity in subjects where the slightest inaccuracy in drawing would tell. In laying the color, it will be necessary to observe that the tint comes up to, and covers the outline, since the eye might be misled by the interposition of a thickness of glass. The most minute space left uncolored will show very distinctly when the picture is magnified by the lens of the lantern. Blanks occur only where it is intended to represent white.



THE PAINTING.

For the purpose of elucidating the method of painting in the clearest and simplest manner, we will suppose that we are conducting the reader through the detail of the various parts of the process necessary for painting the subject shown in the small design given in the frontispiece. This subject is only proposed for the purpose of allowing of a clearer description, by means of the different portions of the work. We trust the reader, remembering the advantages of describing a process of coloring without having a colored illustration for reference, will pardon us if it appears to him that we dwell with apparently unnecessary minuteness upon the different portions of our description. He will observe that it is not so much intended to refer to a particular design, as to explain generally the method of executing transparent painting. Place the outline upon the easel, adjust it the most convenient height for working, and place the engraving where it can be consulted readily, and without inconvenience. The glass, preparatory to being painted on, must be scrupulously clean, having received a final polish from an old silk handkerchief.

As in painting generally, so in painting on glass, the sky and distance must first be worked out. The palette for these will be set with gall-stone, rose madder, and Prussian blue. The management of color on the palette is a matter of discretion and habit with the painter; but, generally, the light and warm colors are placed near where the thumb passes through the palette, and hence the darker and cold colors are continued round the rim. Thus the gall-stone would be placed nearest the thumb, then the rose madder, and lastly, the blue. In this landscape subject, the sky and distance will be generally gray, and the lights in the sky of a pearly white.

Take the largest brush, and with a tint made of rose madder, and a very little Prussian blue, begin at the top of the picture, and lay the tint from left to right over the entire space to be occupied by the sky, making the tint lighter as it approaches the horizon. The first tint is for the pearly lights, and it must, therefore, be very soft even in the deepest part, while at the horizon it should be almost white. The darker clouds are painted with a tint made of Prussian blue, rose madder, and a little gall-stone, carefully observing form and character, and avoiding any degree of hardness at the edges. When marking out the forms with this tint, the half lights should be left, again worked on, and subsequently retouched with a tint of the same colors, but somewhat lighter, and having more gall-stone in it.

The edges and extremities of the clouds and oppositions in the sky, will appear hard; therefore, to blend and soften the work, the dabber will be necessary. To prepare the sky for blending and softening, it must be breathed upon; after which it may be carefully and gently worked over, and softened with the largest dabber. It will be found that by this operation extremely minute particles of color will be removed, leaving on the places worked upon the appearance of a very fine stipple.

The breathing must be slight, for if the color be too much moistened it will be removed by the dabber and will be carried into the next tint. It is bad enough when the tint is vitiated, but worse when spots occur by light being carried into dark, or *vice versa.* This operation must be proceeded with gradually—that is, as well as it can be effected on parts which are uniform in tone; and after each successive part has been worked; the dabber must be cleaned and dried, otherwise it will remove the color. Thus the entire sky must be blended and softened, but not overwrought lest the forms of the clouds should be destroyed. The process must be carried out gradually, or mischief might occur from attempting too much at once. The danger to be apprehended in working the dabber in painting on glass, is the same as that which is liable to occur from excessive use of the softener in oil-painting. The forms are likely to become subdued, and the entire sky flattened. It is, therefore, necessary to preserve the roundness and substance of the forms, each of which must have its own particular lights and shades.

In the subject we are now considering, the distance occupies but a small portion of the picture, since it consists only of the two mountains on the extreme right. The more remote is nearly of the same tint as the sky which hangs over it. In consequence of its being so distant there is an absence of all detail, and it is represented by a tint almost flat. The summit of the other mountain is partially obscured by the heavy cloud over it; but, approaching the middle distance, it increases in intensity, until it corresponds in tone with the dark part of the cloud above it. In painting this the light must be left, and worked afterwards to its proper tint.

Begin with the top of the mountain, using rose madder, and a small portion of Prussian blue, adding more blue as approaching the middle distance, the lights of which will be painted with rose madder, and gall-stone, broken to a warm gray with blue; then blend the whole with a small dabber, every care being taken to preserve the forms. The size of the dabber must be in proportion to that of the passage to be worked. The middle distance is the most difficult part of the picture. It is composed of the mountain in the centre, the hill to the left, and the flat ground to the right. The first is a mass of light and half light; the second, of half shade and shade; and the third, of half shade, and shade in a deeper degree.

Place upon the palette, and in the following order,—gall-stone, madder brown, Vandyke brown, rose madder, crimson lake, Prussian blue, and indigo; and with the largest brush commence at the top of the mountain in the centre, and wash in the forms according to the markings with gall-stone, rose madder, and Prussian blue, working with this tint to a little below the top of the ruined castle; after which, add crimson lake by degrees and in very small quantities: and with this all the dark parts may be laid in, but only in very warm grays, even where most positive in color.

The lights upon the top of the mountain must be worked with gall-stone and a little rose madder; then add a small portion of blue, so as to make a grayish green, with which color the lights near the base of the mountain and the rise on the extreme right. The dark parts of the hill, on the left of the castle, are to be made out with a tint of madder brown and Prussian blue. To this tint add rose madder, for the dark markings of the hill on the right of the castle, and leave them softer and softer, as they approach the base of the centre of the mountain, so that the tints may blend and be lost in each other.

The lighter parts of the hill will be colored with gall-stone and brown madder; with the addition of a little rose madder, on approaching the most distant part. With Vandyke brown and indigo make out the darkest markings of the flat ground, and add a small portion of crimson lake, when proceeding to the extreme right. The line of foliage, which breaks the centre mountain from the flat ground, must be laid in with gall-stone and madder, leaving a few points of light tinted with gall-stone only to represent the light glancing upon the trees. The half shades of the flat ground will be painted with rose madder and madder brown, and the dabber must be freely used to soften every part. Those minor lights that it would be troublesome to leave may be taken out with the point of a penknife, and afterwards retouched with the necessary tint. Instead of elaborately working up the outlines of the foreground objects, such as trees, castle, &c., it will be found more expeditious to cover the lines, and afterwards remove the superfluous colour.

THE FOREGROUND.

The painting of the foreground of our illustration is divided into two parts—the castle, the surrounding trees, the water, and reflections forming the first; and the figures, boat, detailed mass of rock, sandy ground, loose stones, &c., the second. In this part of picture the palette must be set with all the colours except black, which is only required when black spots or lines are to be expressed. Begin with the most prominent object at the back of the foreground—that is, the castle—drawing in the numerous shadows with brown madder and rose madder. The wall on the left and the base of the tower are shadowed by a clump of trees. The right of the tower is in the shade, because the light comes from the left; and the body of the building is almost entirely shaded by the tower.

Having drawn in the shaded portions, as shown in Fig. 4, proceed to color the lights on the castle with burnt sienna and rose madder, adding a little Prussian blue, in order to imitate that clear gray always presented by worn stone. The markings of the ground on which the castle stands may be made with a tint of rose madder and brown madder. The ground itself may be coloured on the left, with brown madder and Prussian blue; on the right, work with the same tint, qualified with a little crimson lake, and in the centre with burnt sienna, rose madder and gall-stone, for lights; and rose madder, madder brown and Prussian blue, for the half lights.

The house in the distance may be tinted with rose madder, gall-stone, and brown madder; for the lights of the trees near it, gall stone and madder brown will be the tint; and for the shades, intense blue with Vandyke Brown. The distant trees on the left of the castle may be made out with madder brown and intense blue; and the same tint with the addition of a little gamboge, will serve wherewith to work the lights. The nearer trees will be laid in with madder brown and gall-stone, but for the lights gall-stone alone will be used. The stems of the trees must be of warm gray, which will be represented with a tint made of either gall-stone, rose madder and Prussian blue, or madder brown and indigo. In dealing with the lights in foliage it will be more satisfactory, and certainly easier, to mass in the foliage with a brush, and then take out the lights with the point of a penknife.

Reflections in water are represented with the same tints as the objects by which they are cast, and they should, therefore, be painted with the same colors as the objects themselves, and at the same time. The forms of objects in reflection may be given very indefinitely, save when the water is very still, in which case the forms of the reflected objects will more nearly approach the degree of perfection with which they are represented in the substance. Those parts of the water which do not cast reflection will be painted with tints corresponding in colour, but more gray in tone than those surrounding the reflected objects; and having effected this, the work will be brought down to the line of ground immediately bordering on the water, before touching which, blend and soften all that has not been touched with the dabber.

The foreground of the picture is generally flat, but slightly undulating to the right, where broken lines are obtained by means of grass. In this part many, indeed most, of the tints used in the other parts are repeated. The grays of the summit and of the centre of the mountain are repeated on, and around the mass of rock to the left, in which also occur tints of some of the dark parts of the hill. The lights in the broken ground surrounding the castle are introduced in a much broader mass round the boat and figures; and the yellows and greens of the foliage are repeated largely in the grass to the extreme right, and in a minor degree by a few broken tones round the mass of rock. The figures, boat and dark markings of the rock, together with the loose stones scattered about, are left until the last, because with them rests, in a great degree, the force and toning of the entire picture.

As the composition abounds with tints allied to purple, if the upper part of the dress of the central figure be painted of a decided and positive blue, this will have the effect of reducing the lower and broken purples to gray; and by colouring the jacket of the female figure a bright orange, a contrast will be obtained which will operate powerfully in promoting the effect of the picture. But in order that the contrast between these strongly colored draperies may not be too violent, and seem artificial, they may be modified and harmonized by the jacket of the third figure being a neutral orange; and if the skirt of the same dress be coloured crimson, it will serve to harmonize and contrast the green tints. Dark touches on the shaded side of the figures and in the marking of the rock will give then force and relief, and, at the same time, throw the other parts of the picture back. The mass of shade in the rock is repeated in a less degree in that of the boat, in order to prevent its having the appearance of being isolated, or of having been placed there only for the sake of contrast. The loose stones are valuable for the same purpose; but in order to secure variety, they must be of a color much more gray than that of the surrounding objects. The foreground of a picture is indebted for some of its best effects to decision of execution, purity of color and tone, force of light and shade, and careful detail. Decision of execution is a result of careful and observant practice; and decided opposition is obtained by the judicious contrast of tones and quantities. Purity and force of color are obtained by the disposition of the more positive tints and colors in the foreground; a means whereby, also, all other tones are broken and subdued, Light will of necessity be stronger in the foreground than in any other part of the composition, because the objects upon which it falls are in the nearest sites. The same rule applies to shade. Wherever, indeed, the highest lights occur, they are universally supported by the deepest shades. Careful detail, in its strict sense, is a quality appertaining only to the immediate foreground, where the objects are supposed to lie so near the eye that their structure and surfaces are plainly visible. By detail is understood, not only a realization of the forms of the nearest objects by truthful drawing and observation of their light and shade, but also a description of their components, surfaces and materials. Force, substance, reality and detail are primary qualities of foregrounds, inasmuch as they both describe objects in immediate proximity, and serve to cause the retirement of the middle and remoter distances.

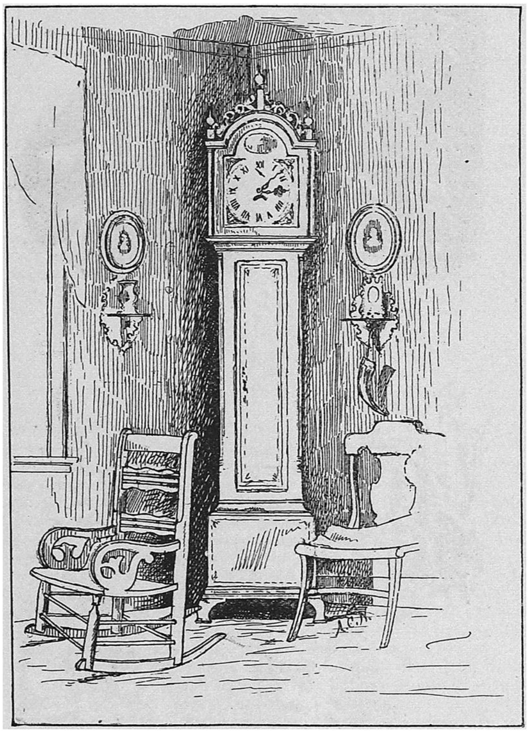
FINISHING.

In this stage it will be necessary to reconsider every part of the picture; to soften, subdue, or brighten according to circumstances, those parts that may require retouching, with a view to harmony and general effect. Lamp-black may now be added to the palette, and employed wherever that color may be deemed necessary. In the subject which we are treating it is not necessary; but wherever it may be necessary to touch here and there with this pigment, for the sake of sharpness and decision, its use should be deferred until this stage; because, if employed earlier, it will probably mislead the student into blackening the tone of the whole work. All the edges reflecting light, such as those of the castle, the mass of rock, figures, boat, &c., nearest the eye, must be sharpened and brought to their proper degree of brilliancy, and all the dark points should be reduced to a proper depth; in short, in this stage must be effected all that cannot be properly done at any earlier stage.

The picture having been finished according to the best taste and feeling of the painter, must be protected by having a piece of glass of the same kind as that on which it is painted fixed over it, in the manner already described for the security of the outline; and in order to prevent injury from the contact of the glass laid over it, a narrow rim of thick paper should be interposed between the glasses. This may be attached, by means of paste or gum, to the exterior edge of the glass containing the picture, a space having been already provided for this, by the work not having been carried out to the edge of the glass. We may, if we please, execute the whole of the work on a single piece of glass. In this case having perfected the outline, we secure it by passing over the face of the glass a thin wash of lac varnish or a varnish made of Canada balsam much diluted with turpentine. If the lac varnish should require to be diluted, spirits of wine must be employed for the purpose; and the varnishing should be performed before a fire, when it dries immediately, and we proceed to paint on the same surface. The varnish may be employed at the various stages, and at the finish of the work, to fix the colors. It is, however, advisable always to secure the finished painting by placing a glass before it.

Designs for the magic lantern have hitherto been executed chiefly in oil colors; but for dissolving views, they are not equal in brilliancy and effect to those painted in water colors, by the manner already described. The method of painting transparency-designs on glass with oil colors is in almost all respects similar to that we have given for the use of water colors, the principal difference being in materials only. The same description of brushes, dabbers, &c., are used and the same list of colors are employed in oil, as in water color painting, except that pink is to be preferred to gamboge, as being richer and more transparent. The oil colors employed are those commonly sold in tubes. The vehicles used to temper the oil colors and bring them to a proper strength and consistency for use are mastic varnish diluted with turpentine, and japanners' gold size also diluted with turpentine. The latter is chiefly employed for those colors which do not dry well, such as madder lake and Italian pink. For blues and the range of gray tones the color of japanners' gold size is objectionable; for these, therefore, the diluted mastic varnish is to be used. One of the most difficult things in transparent glass painting, is to secure a flat, clear, eqal tint of blue for skies, &c., and this part of the work is of the utmost importance. To obtain this desirable effect, the tint is laid on the glass as evenly as possible, and afterwards equalized by a careful application of the brush dabber. Some painters use the point of the forefinger as a dabber, and when used with dexterity it is very effective. A serviceable dabber may also be formed by tying a little cotton wool in a piece of soft white kid. All these dabbers may in turn be employed with advantage.

Before this flat tint is permitted to dry we take out the necessary lights, as those of the clouds. By taking them out while the color is wet, we are enabled to soften the edges if necessary, or we may leave them clear and sharp. Leather, or paper, rolled in the form of a stump, is useful in taking out lights. In all other respects the instructions already given for the use of water colors apply to paintings in oil colors, and will be sufficient to guide the learner in the use of them. Water and oil colors may sometimes be both employed, with excellent effect, in the same painting, each having distinct qualities which, in some subjects may be advantageously combined. The water colors are delicate, clear and brilliant in their effects; while the solidity and rich fullness of tone attainable by the use of oil colors, are very eligible for particular objects, as in parts of foregrounds and figures where fullness of tone and strong relief are required.



Varnish colors are also employed in painting slides. They are prepared by grinding portions of powder colors with a muller on a thick plate-glass, either in mastic varnish, or in Canada balsam to which has been added half its bulk in turpentine. Colors thus prepared may be kept in small bottles well corked. The brushes employed must occasionally be well cleaned in turpentine. But little of the required color should be taken out at a time, and it may be spread on a piece of glass, or on an earthenware palette. If the color be too thick, the addition of a little turpentine will bring it into working order. For painting those parts which are to be impervious to light, a black may be obtained by using asphaltum dissolved in turpentine, to which lamp black is added.

Any color that has dried on may be removed by the point of a penknife: and in this way white or colored lines may be produced on black surfaces—that is by scratching through the black with a point and coloring where necessary.

In painting slides, care must be taken to allow for the effect of the color of the artificial light to be used in the lantern; such light being always of a yellow cast will alter the tone of the colors materially, converting certain mixtures of blue and red into a neutral tint—as where reds have been used with blue or where much purple has been employed. A frequent examination of the effects produced by the light of a lamp on color will soon accustom the artist to regulate the tones of his picture with perfect success.

WALL PAPER HANGINGS.

BLOCK wall paper, or paper printed by hand, the designs being cut in relief on blocks of wood, affords one of many illustrations in the decorative arts of the superiority of hand-work to machinery, and, in this instance, even in the matter of precision in taking from the color pad the requisite amount of color, and in regulating the pressure in transferring it to the paper. The process secures greater richness, softness, delicacy, and generally a higher artistic effect than is attainable in printed designs. Larger figures, too, can be introduced into block wall paper; flowing and damasked designs are peculiarly suitable for reproduction, and looks more effective in the mass than the smaller details appropriate to printing from cylinders. The cylinders are of wood to which thin plates of metal are attached, the pattern being formed by insertions of raised felt in the provided interstices. Occasionally manufacturers go out of their way to show the full resources of the hand process. In one pattern requiring eleven sets of blocks, one set of blocks being the usual number, we find thirty-eight colors with ninety-four changes of color in each sequence. The ground is composed of a small sprig pattern spangled with tank, and by a process of wiping out on the blocks the superimposed colors are graduated and blended, producing a charming diaphonous effect. The finest figured products of the loom may be said to be rivalled in delicacy and refinement on wall paper by hand printing. The designer of a pattern is restricted by the manageable size of blocks unless there is more than one set, and by the moderate length of the repeats. The repeat for hand printed paper seldom exceeds, for the reason stated, two feet in length, and more frequently is from twelve to fourteen inches. In machinery paper it is even shorter. Not unfrequently a few lines introduced into a design without due consideration or by the slip of an instrument in the carving, will lead to the optical illusion when the paper is in place of its not being hung straight. The larger the repeat the greater the individuality that can be imparted to the pattern. As regards color, for one set of blocks twelve or fourteen is the maximum.

Whilst flat wall papers constitute the staple of the trade there is a steady increase in the demand for embossed ornament, stimulated by the many beautiful designs successively produced in this line, which includes not only flock and the imitation of the raised Spanish leather work of the seventeenth century, but a coarse canvas face backed with paper, and also paper backed with a cotton textile, the two being pressed together by the die. The canvas faced paper has an agreeable mat effect, and with the paper lined with cotton is paneled on the wall. The raised portions of surface holding colors in various degrees relieves the monotony of the figures. The designs for handings simulating leather are beaten up in sheet copper and then the surface is chased for detail; a cast taken from this forms the matrix of the die which is pressed with great force. The surface of the paper is then covered with metal foil and finished in colored lacquers. For the two last named embossed papers wooden or metal dies are used. The repeats can be of any required size, but ordinarily small figures are adopted. These may be decorated when fixed on the wall. In all descriptions of fine artistic paper, other than those with stained ground, a slightly roughened or smooth surface has manifest advantages, the protuberances supplying delicate shades.

ONE OF THE LOST ARTS.—The Chinese had formerly the art of painting on the sides of porcelain vessels fish and other animals which were only perceptible when the vessel was full of some liquor. They call this species "Kia-tsim," that is, "azure is put in press," on account of the manner in which the azure is laid on. They are every now and then trying to recover the art of this magical printing, but to no purpose. We (*The Mirror* of 1836) may here remark, that the secret of an art peculiar to the Chinese, still remains with them; namely, that of manufacturing the beautiful egg-shell porcelain, so thin, semi-transparent, delicate, and fragile, of which we now and then see specimens in the cabinets of china fanciers. Many have attributed these qualities to the fineness, whiteness and degree of crystallization of the peculiar clay of which it is made; but others, comparing the porcelain of the present day with that of a former, believe that the Chinese, still possessing the proper material for this exquisite manufacture, have lost all the art of working it to the same effect.